

Notice of Allowability

Application No.

09/672,440

Examiner

Eric Coleman

Applicant(s)

PATEL ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to declaration and amendment (including arguments) filed 10/16/06.
2. ☒ The allowed claim(s) is/are 1-52.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Eric Coleman
Primary Examiner

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: The combination of features in the independent claims was not found in the prior art.

The combination of features in claim 1 comprises during execution of an instruction on a computer, in response to an operation of the instruction calling for an architecturally-visible side-effect in an architecturally-visible storage location, storing a value representative of an architecturally-visible representation of the side effect, a format of the representative value being different than an architecturally-visible representation of the side-effect, and resuming the execution without generating the architecturally-visible side-effect; later writing the architecturally-visible representation corresponding to the representative value into the architecturally-visible storage location. This combination of features was not found in the prior art.

Claim 9 comprises circuitry designed to recognize an operation of an instruction calling for an architecturally-visible side effect in an architecturally –visible storage location, and in response, to store a value representative of an architecturally-visible representation of the side-effect, a format of the representative value being different than an architecturally-visible representation of the side-effect, and to resume the execution without generating the architecturally-visible side-effect; circuitry and/or software designed to later write the architecturally-visible representation corresponding to the representation value into the architecturally-visible storage location. This combination of features was not found in the prior art.

Claim 13, comprises storing a context of a first process and loading a context of a second process to place the second process into execution, each context comprising a set of resources to be reloaded whenever a process associated with the context is reloaded for execution; at least some instructions executed in a multi-stage execution pipeline of the computer maintaining results in storage resources outside the context resource set, instructions for execution by the pipeline being marked to indicate whether or not a context switch may be performed at a boundary of the marked instruction. This combination of features was not found in the prior art.

Claim 16 comprises computer comprising: context switch software programmed to store context of a first process and to load a context of a second process to place the second process into execution, each context comprising a set of resources to be loaded whenever a process associated with the context is reloaded for execution; a multi-stage execution pipeline of a computer at least some instructions executed in the pipeline maintaining results in storage resources outside the context resource set, instructions for execution by the pipeline being marked to indicate whether or not a context switch may be performed at a boundary of the marked instruction. This combination of features was not found in the prior art.

Claim 22 comprises during hardware execution of an instruction stream, recognizing a condition that is a superset of a condition whose occurrence is desired to be detected, and raising a first exception as a result of recognizing the superset condition; in software, filtering the superset condition to determine whether the desired condition has occurred, and if so, gathering further information about the condition; if the

desired condition is determined to have occurred, establishing a second exception to be raised after execution of further instructions of the instruction stream, and making the further information available for a handler of the second exception. This combination of features was not found in the prior art.

Claim 24 comprises an instruction execution pipeline designed to execute instructions, and to monitor the executing instructions for a condition arising during execution that is a superset of a condition whose occurrence is desired to be detected, and to raise a first exception as a result of recognizing the superset condition; software designed to filter the superset condition to determine whether the monitored condition has occurred, and if the monitored condition is determined to have occurred, to gather further information about the condition, and to establish a second exception to be raised after execution of further instructions of the instruction stream, and to make the further information available for a handler of the second exception. This combination of features was not found in the prior art.

Claim 34, comprises during execution of a program on a computer, recognizing in hardware a condition in which an instruction is to affect the function to be performed by a second instruction and in response setting the processor into single-step mode; taking a single step exception after executing the second instruction, and setting the processor out of single step mode. This combination of features was not found in the prior art. The variation to this combination in claim 36 also was not found in the prior art. The variation to this combination of features in claim 40 also was not found in the prior art.

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Claim 46 comprises during execution of a program on a computer, recognizing in hardware a juxtaposition in memory of first and second instructions is to affect the function to be performed by the two instructions, and in response, setting the processor into single-step mode; taking a single step exception after executing the second instruction and setting the processor out of single step mode. This combination of features not found in the prior art. The variation to this combination of features in claim 50 also was not found in the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

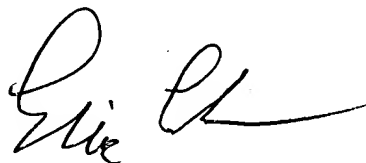
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Coleman whose telephone number is (571) 272-4163. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EC

A handwritten signature in black ink, appearing to read "Eric Coleman", with a stylized flourish at the end.

ERIC COLEMAN
PRIMARY EXAMINER